Endobronchial Ultrasound and Extended Roles

Know Thy Limitations

To the Editor:

In the December 2012 issue of CHEST, Kennedy et al1 raise an important point about acknowledging the boundaries of endobronchial ultrasound-guided transbronchial fine-needle aspiration (EBUS-TBNA), citing infectious complications after sampling a nonsubsternal thyroid nodule. There are a number of issues to consider.

The first is infection. Proximity to the vocal cords is likely to be an issue with oropharyngeal contamination. Substernal thyroid nodules, and avoidance of more invasive surgical excision or mediastinoscopy, may well be a better indication for an extended role of EBUS-TBNA, but more data are needed to clarify this.2 The risks for infection in this scenario may be reduced by greater distance from the vocal cords (although the EBUS-TBNA needle is not sterile), and this might better justify EBUS-TBNA over surgical exploration.

Second, what is the best test in this situation, and who is the best trained person to do it? Radiologists (especially those with a subspecialist interest in head and neck) are very adept at sampling thyroid nodules accessible via ultrasound-guided fine-needle aspiration under asepsis. Moreover, it is somewhat harder to justify complications when doing a procedure that someone else is more trained to perform. As another example, a few EBUS-TBNA operators perform transesophageal fine-needle aspiration using an ultrasound bronchoscope in mediastinal staging of potentially operable lung cancer.3 However, there may be occasions where EUS-FNA is not available (given its considerable cost) and a trained EUS-B-FNA operator could perform this as an alternative if only endobronchial ultrasound equipment is available.

In summary, there is a natural inclination, as with any innovation, to extend the roles of EBUS-TBNA with time, but this needs to be recognized in EBUS-TBNA curricula and training programs. Careful consideration in the light of existing complications when doing a procedure that someone else is more trained to perform. As another example, a few EBUS-TBNA operators perform transesophageal fine-needle aspiration using an ultrasound bronchoscope in mediastinal staging of potentially operable lung cancer.3 However, there may be occasions where EUS-FNA is not available (given its considerable cost) and a trained EUS-B-FNA operator could perform this as an alternative if only endobronchial ultrasound equipment is available.

In summary, there is a natural inclination, as with any innovation, to extend the roles of EBUS-TBNA with time, but this needs to be recognized in EBUS-TBNA curricula and training programs. Careful consideration in the light of existing complications when doing a procedure that someone else is more trained to perform. As another example, a few EBUS-TBNA operators perform transesophageal fine-needle aspiration using an ultrasound bronchoscope in mediastinal staging of potentially operable lung cancer.3 However, there may be occasions where EUS-FNA is not available (given its considerable cost) and a trained EUS-B-FNA operator could perform this as an alternative if only endobronchial ultrasound equipment is available.

Relationship Between Pulmonary Emphysema and Renal Function in Smokers

To the Editor:

We read with interest the article by Chandra et al1 in CHEST (September 2012). These authors reported that in smokers, more severe emphysema is associated with kidney dysfunction independent of the common risk factors for kidney disease. They further
noted that no prior study has investigated the relationship between kidney function and emphysema and that the mechanisms of kidney dysfunction in patients with emphysema need further investigation.

Chandra and colleagues1 studied 508 cases, assessing the severity of emphysema by CT scan and comparing the results with glomerular filtration rates. However, we note that from Figure 3 of their publication, only 16 patients had an emphysema percentage of ≥20%. In this regard, we would like to call to the attention of the authors and the readership of CHEST a study published in 1989 that one of us (V.L.R.) participated in.

Pratt et al6 examined the cause of death in a consecutive series of 1,033 autopsies and observed that chronic renal disease is a much less common cause of death in people with emphysema, as compared with those without emphysema (P = .0003). The trend persisted when individuals who died of smoking-related diseases were eliminated from the analysis (P = .0003). When only those cases with discernible emphysema were examined (n = 272), the percentage of emphysema in patients dying of chronic renal disease was significantly lower than in all other causes of death (P < .006). The percentage of emphysema was assessed by point counting of inflation fixed lung specimens to determine the volume percentage of emphysema.

From a mechanistic perspective, Pratt et al6 proposed that destruction of the pulmonary vascular bed in emphysema reduces the efficiency of conversion of angiotensin I to angiotensin II. This, in turn, could interrupt, or at least ameliorate, the vicious cycle of renal injury and release of renin leading to production of angiotensin, with a resulting increase in BP and further renal injury. Thus, an individual with emphysema might be less likely to progress to fatal end-stage renal disease. These observations are also consistent with epidemiologic studies that have shown that smokers have, on average, a lower BP than that of nonsmokers. 4

What is not contradictory is that in considering the results of each study, one must conclude that further research is required into the development of renal comorbidities in patients with COPD. Both studies suggest that renal disease may be an important contributor to the disproportionate burden of cardiovascular disease and cardiovascular death in patients with COPD.

Reproduction from a mechanistic perspective, Pratt et al.6 proposed that destruction of the pulmonary vascular bed in emphysema reduces the efficiency of conversion of angiotensin I to angiotensin II. This, in turn, could interrupt, or at least ameliorate, the vicious cycle of renal injury and release of renin leading to production of angiotensin, with a resulting increase in BP and further renal injury. Thus, an individual with emphysema might be less likely to progress to fatal end-stage renal disease. These observations are also consistent with epidemiologic studies that have shown that smokers have, on average, a lower BP than that of nonsmokers.4 What is not contradictory is that in considering the results of each study, one must conclude that further research is required into the development of renal comorbidities in patients with COPD. Both studies suggest that renal disease may be an important contributor to the disproportionate burden of cardiovascular disease and cardiovascular death in patients with COPD.

Divay Chandra, MD
Paul M. Palevsky, MD, FCCP
Frank C. Sciurba, MD, FCCP
Pittsburgh, PA

References


